

Appl. No. 10/724,483
Amdt. Dated 07/27/2006
Reply to Office action of July 7, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 and 3-14 (Canceled)

15. (previously presented) Method of forming gate dielectrics on a semiconductor substrate, the substrate having a top surface, a first area and a second area which is distinct from the first area, comprising:

- forming a first gate dielectric on the top surface of the substrate;
- next depositing a first layer of polysilicon over the first gate dielectric;
- next protecting the first gate dielectric from damage during subsequent processing steps by forming a sacrificial hard mask over a selected area of the first layer of polysilicon which is over the first gate dielectric;
- next forming a second gate dielectric in the second area;
- next removing the sacrificial hard mask; and
- after removing the sacrificial hard mask, depositing a second layer of polysilicon over the second gate dielectric and over the first layer of polysilicon.

16. (canceled)

17. (canceled)

18. (canceled)

19. (canceled)

20. (canceled)

21. (previously presented) A method, according to claim 15, wherein:

the first gate dielectric comprises a material selected from the group consisting of silicon dioxide (SiO₂), silicon oxynitride (SiON), silicon nitride (SiN) and high-k material.

Appl. No. 10/724,483
Amdt. Dated 07/27/2006
Reply to Office action of July 7, 2006

22. (previously presented) A method, according to claim 15, wherein:
the second gate dielectric comprises a material selected from the group consisting of silicon dioxide (SiO₂), silicon oxynitride (SiON), silicon nitride (SiN) and high-k material.
23. (previously presented) A method, according to claim 15, wherein:
the sacrificial hard mask comprises a material selected from the group consisting of germanium (Ge), silicon germanium (SiGe), amorphous carbon, SiO₂, Si₃N₄, and other materials that are easy to remove from a silicon wafer without leaving a residue.
24. (previously presented) A method, according to claim 15, wherein:
the second gate dielectric is formed by a process selected from the group consisting of:
rapid thermal oxidation (RTO) in NO, N₂O, NH₃, O₂ (500-1100 degrees C);
plasma nitridation treatment on base oxide (25 - 800 degrees C); and
plasma oxidation; UV oxidation; and atomic layer deposition.
25. (previously presented) A method, according to claim 15, wherein:
the first gate dielectric is thinner than the second gate dielectric.
26. (previously presented) A method, according to claim 15, wherein:
the first gate dielectric comprises a high-k material.